

Interactive comment on “In situ aerosol optics in Reno, NV, USA during and after the summer 2008 California wildfires and the influence of aerosol coatings” by M. Gyawali et al.

Anonymous Referee #3

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In the manuscript Authors summarize the results of aerosol optical characteristics from two months. It is evident that the optical measurements were carefully carried out with high temporal resolution. However, other parameters (meteorology, air mass history, etc.) that could help the understanding the results are missing from the text, hopefully not because they are not considered. The inclusion of these data could probably illuminate the meaning of a “normal” month in California. (Normal means general, average or ...?)

In the first part of the paper I’ve got confused in the interpretation of LAOC and ALAOC. Authors note that the absorption properties of these terms are (or may be) character-

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ized by strong wavelength dependence: stronger at shorter, weaker at longer wavelengths. I cannot see how LAOC and ALAOC can be distinguished by the method described in equation 1. To my opinion, the absorption coefficients measured at both wavelengths should refer to the absorption of BC, LAOC and ALAOC together. I accept that the absorption of BC is inversely related to the wavelength and using this, the BC absorption can be eliminated. But no such definite information is available for LAOC or ALAOC. If we suppose that neither LAOC nor ALAOC absorb at 870nm (which is probably not the case), in β ALAOC reflects the combined effect of LAOC and ALAOC at 405nm. Consequently the discussion on β ALAOC is not convincing for me, however, from the data clear difference can be observed.

In the discussion of AEA: Authors write that in July the minimum value of AEA in the diurnal pattern is attributed to vehicular emission. Please specify whether biomass burning or vehicular emission was the dominant? I found the discussion of this part rather speculative.

Simulations: I think it can be regarded as a first step in modeling of uncoated/coated BC particles. In the simulations the wavelength dependence of the refractive indices are not considered. Is it unimportant or more time and modeling efforts would be necessary for it?

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 14059, 2009.

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